

Chapter 8

Education for Environmental Citizenship and Responsible Environmental Behaviour



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8.1 Introduction

Young people are growing up in a world of overwhelming environmental challenges resulting from the declining state of the environment, which is intensifying economic and social problems (Pe'er et al. 2013). These environmental issues are systemic – they are interrelated and interdependent and straddle the natural and social realms. Such a world requires a citizenry that can comprehend the complexity of environmen-

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tal issues, is committed to the idea of environmental-social sustainability and actively participates in actions in the direction of solving current problems and preventing the creation of new ones. The concept of Environmental Citizenship embodies behaviour – an actively involved citizen who exercises their environmental rights and obligations in both the private and public spheres. Accordingly, Education for Environmental Citizenship implies behavioural change. The goal of Education for Environmental Citizenship is to facilitate the commitment towards and the capacity for active participation in environmentally responsible actions; it is about cultivating the cognitive (e.g. knowledge and understanding, skills and competences) and affective (e.g. values, beliefs, attitudes/emotions, assumption of responsibility, sense of ability) components that both motivate and enable the translation of knowledge into effective action as citizens. This chapter is based on the assumption that Education for Environmental Citizenship is not coercive or indoctrinating – it is not about imposing ‘correct’ behaviours but rather about facilitating the individual’s intellectual growth and emotional capacity that may lead to a critical and actively engaged individual.

Human behaviour is extremely sophisticated – what shapes pro-environmental behaviour is complex and context specific. Additionally, empirical research indicates a discrepancy between having environmental knowledge and environmentally supportive attitudes and behaving pro-environmentally (e.g. Heimlich and Ardoin 2012; Hungerford and Volk 1990; Hines et al. 1987). It is, therefore, not surprising that identifying the numerous internal (and external) factors that influence a person’s decision towards a course of action and elucidating how these interplay is the focus of extensive but inconclusive study. The point of departure of this chapter is that social and psychological study of behaviour has much to inform the study of environmental behaviour and, deriving from this, to inform regarding the type of education that educates towards behaviour/action in the goal of social transformation. This chapter focuses on internal factors (i.e. psychosocial, personality) rather than external ones (i.e. situational, contextual) that influence behaviour. Within this framing, the chapter presents selected models regarding factors influencing behavioural decisions that have been acknowledged as influential frameworks for investigating pro-environmental behaviour and selected contemporary theories that may inform behavioural models.

As a basis for the behavioural models, this chapter opens with a brief mapping of types of pro-environmental behaviour in the context of Environmental Citizenship. The main body of the chapter reviews the behavioural models. It concludes with a brief discussion of the implications of the presented models for educational practice from the perspective of Education for Environmental Citizenship.

8.2 Pro-environmental Behaviour in the Context of Environmental Citizenship

Growing complexity and interconnection between and within societies have become inherent characteristics of the modern world. Outreach to citizens is related to the concept of ‘community’, which embraces the local, regional, national and

international contexts that individuals live in to create a common public space, within which individuals can act together on a value- and knowledge-based foundation.

Citizenship actions, in general, are acknowledged in the public and private spheres that affect relations between individuals (private spheres) and societies (public spheres). Dirk Postma states that ‘the private sphere is celebrated as the primary space where people are presumed to find ultimate life fulfilment by living according to their own device, taste, religion, or view on life in the pursuit of happiness’ (Postma 2006, p. 24). Citizenship, as a concept, is about the rights and duties of individuals in a given political territory such as the state (Dobson 2005). It is a widely addressed but debated concept, and Environmental Citizenship contributes to ongoing debates in important ways (MacGregor et al. 2005). The citizenship theoretician Dobson (2010, p. 6) defines Environmental Citizenship as ‘pro-environmental behaviour, in public and private, driven by a belief in fairness of the distribution of environmental goods, in participation, and in the co-creation of sustainability policy’. In a narrow sense, environmental behaviour is behaviour that impacts the environment and is, most straightforwardly, understood in terms of environmental science or ecology according to its impact on the environment. This is to the extent where it impacts the availability of resources (material or energy) from the environment or changes the structure or dynamics of ecosystems or the biosphere (Krajhanzl 2010; Stern 2000). As people are in an interaction with their environment almost constantly, almost all human behaviour could be considered environmental behaviour, whether the influence is direct (e.g. cutting down a forest, using public transportation instead of private car or riding a bicycle instead of going by vehicle) or indirect, by influencing the context in which decision-making is conducted (e.g. voting for a public elective who advocates environmental policy, writing a letter to a public servant or government institution). Given that the goal of sustainability is to achieve a long-term reduction in overall negative environmental impact, it follows that for a behaviour to be pro-environmental it needs to promote the attainment of this goal. In order to understand how individual behaviour matters for the transition to sustainability, it is necessary to comprehensively explain how individuals may impact the environment, rather than limit the focus to consumption decisions and related impacts.

Stern (2000) identifies several distinct types of environmentally significant behaviours and claims that a different combination of causes determines the different types. Figure 8.1 shows Stern’s categories of environmentally significant behaviours.

According to Stern’s typology, environmental activism behaviours include active involvement in environmental organisations, demonstrations and campaigns, participation in pro-environmental social movements and leading environmental initiatives. Activism is therefore affiliated with the public sphere. Non-activist behaviours in the public sphere include actions that support public policies (e.g. explicit support of environmental regulations, willingness to pay higher taxes, fees or contributions aimed towards environmental protection, voting). Such behaviours influence the environment indirectly, but the effect may be significant since public policies can change the behaviour of both individuals and organisations. The private

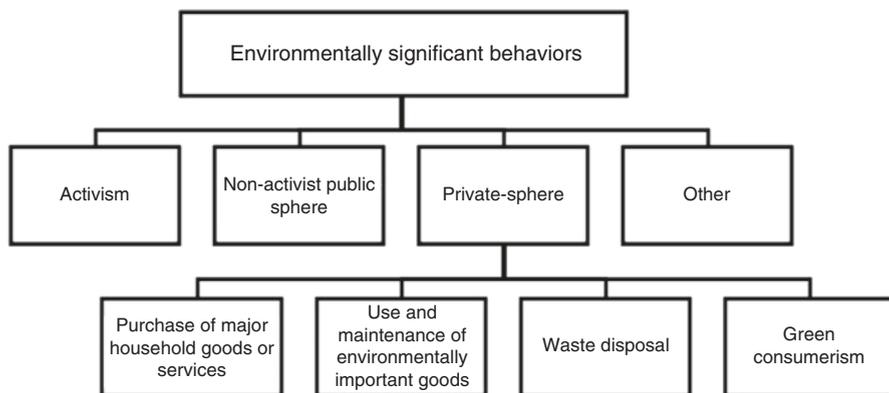


Fig. 8.1 Stern's classification of environmentally significant behaviour. (Based on Stern 2000)

sphere relates to personal lifestyles; it is concerned with our everyday behaviours in our household and personal lives that have direct environmental consequences (i.e. purchasing choices, use of material and energy resources at home, services, what we do with household waste, transportation, recreation). Stern (2000) proposed the subdivision of private-sphere behaviours into four subtypes based upon the type of decision involved: the purchase of major household goods or services, the use and maintenance of environmentally important goods, waste disposal and green consumerism. Individuals may also impact the environment by influencing the actions of the organisations to which they belong. Stern groups these behaviours as 'other' since the causal factors that influence the individual's behaviour in this context may be different from those influencing their private-sphere or political behaviours. In the context of young people, this category may address school, youth movements, sports groups, etc.

Some additional classifications of environmental behaviour are worth mentioning. For example, Thøgersen (1999) identifies three categories: civic activities, consumer purchase decisions and post purchase behaviour. Alternatively, Clayton and Myers (2009) classify three broad behavioural categories: curtailment, behaviour choices and technology choices. These behaviours share some overlap with the above-mentioned categories. Each of these behaviours can be targeted for conservational efforts. Other researchers use a simple dichotomous classification scheme (Inskip and Attari 2014; Karlin et al. 2012; Barr et al. 2005). This is exemplified in relation to energy conservation behaviour as follows: household energy-saving or curtailment actions (e.g. setting thermostat, running dishwasher only when full) as opposed to purchase-related behaviour (Barr et al. 2005; Gardner and Stern 2008). Understanding the similarities and distinctions between behaviours and what variables predict those behaviours is a necessary step for the development of effective intervention strategies that aim to reduce energy use (Karlin et al. 2012).

To support and illustrate the theoretical discussion concerning responsible environmental behaviour (REB), we also draw on empirical measurements of private

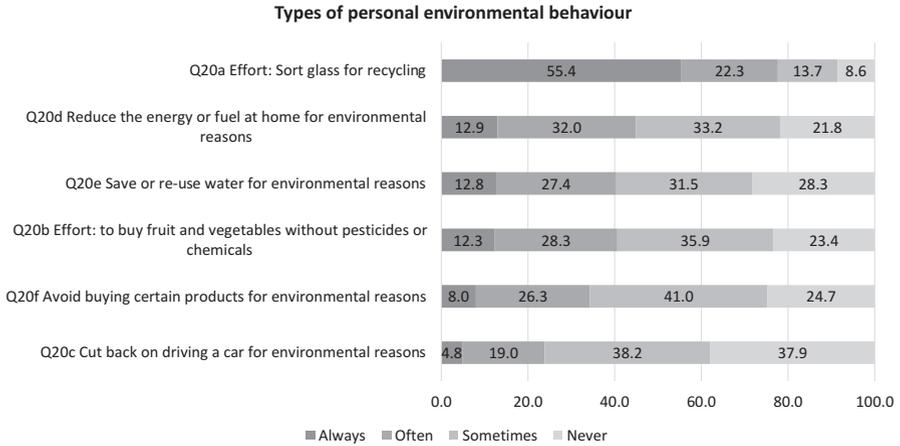


Fig. 8.2 The general distribution of personal environmental behaviour in Europe (%), ISSP Environment III, 2010, *N* = 25,125. (Data: ISSP Research Group 2012)

and public-sphere personal environmental behaviours. Figure 8.2 shows the general distribution of levels of diverse personal sphere environmentally significant behaviours in Europe. Data is from the International Social Survey Programme module on environment (ISSP Research Group 2012) in which personal environmental behaviours were operationally defined as sorting glass for recycling, saving or re-using water, reducing energy or fuel at home, buying fruits and vegetables without pesticides or chemicals, avoiding the purchase of certain products and cutting back on driving a car for environmental reasons. Not surprisingly, support for recycling is the environmentally supportive behaviour conducted most frequently, as found in many studies (e.g. Goldman et al. 2018).

Country-level distribution is also relevant. ISSP Research Group (2012) data presented in Fig. 8.3 show the average answers about recycling behaviour across different countries in Europe.

The data showcases the country differences, underscoring the need for diversity in educational programme design.

Figure 8.4 presents the levels of actual environmental activism (public-sphere environmental behaviour) across European countries. Environmental activism is operationalised here as environmental NGO or group membership, protesting or going to a demonstration. Levels of environmental activism are contrasted against priorities given by citizens either to the environment or to the economy (a traditional worldview divide) as being the most important issue. In many countries, significantly less priority is given to environmental considerations as compared to economic. Norway and Switzerland stand out in the higher priority their citizens give to the environment, as well as Sweden and Austria, whose public perceives similar importance of environment and economy. Data also show the apparent differences among European countries in terms of levels of environmental activism. Petrova

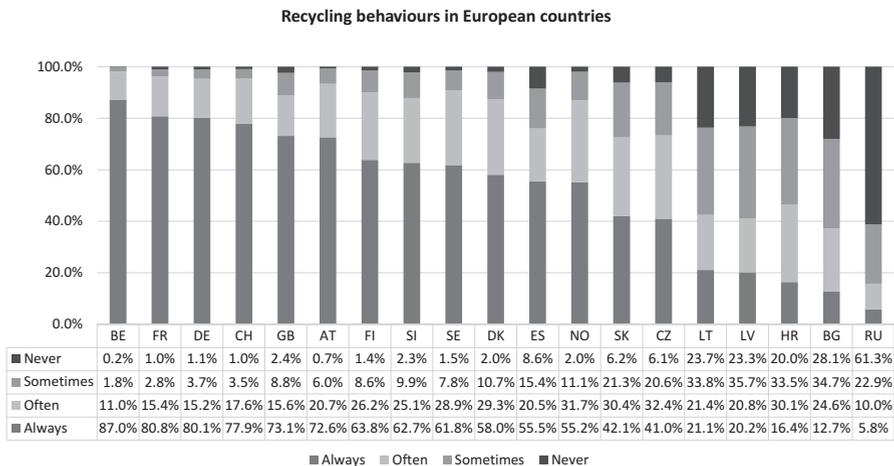


Fig. 8.3 The country-level distribution of recycling behaviour (sorting glass for recycling) in European countries (%), ISSP Environment III, 2010. (Data: ISSP Research Group 2012)

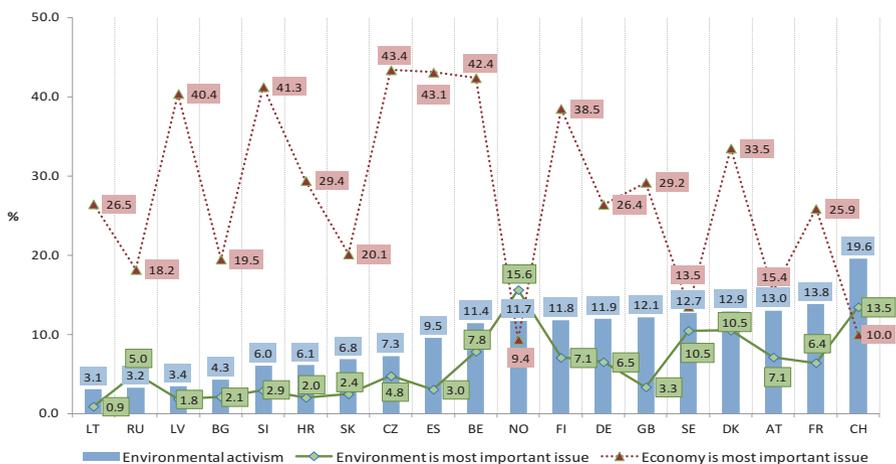


Fig. 8.4 The country-level distribution, in European countries, of environmental activism compared with data indicating environment and economy as the most important issue for their country (%), ISSP Environment III, 2010, $N = 25,124$. (Source: Telešienė and Balžekienė 2016: 168; data: ISSP Research Group 2012)

and Tarrow (2007) have interesting insights concerning these differences. They found that the level of an individual citizen’s capacity for collective action is very low in Central and Eastern European (CEE) countries. They identified several features of the societies in these countries that lead to extremely low levels of civic participation: ‘weakening, demobilization, and even the disintegration of civil

society; the increasing political apathy of post-socialist citizens; and radical or egoistic individualism, social anomie, amoral cynicism, paternalism' (Petrova and Tarrow 2007, p.76). Thus, while drafting educational programmes in CEE countries, these sociopolitical contexts should be taken into consideration.

An interesting study is the Flash Eurobarometer survey of 'Attitudes of Europeans towards building the single market for green products' (Flash Eurobarometer 367 2013). This report focuses on the attitudes of EU citizens to sustainable development (SD) in six sections, of which the first examines citizens' behaviours and attitudes towards environmentally friendly products and the second looks at the influence of environmental considerations on their consumption habits. The results indicate that across the EU, a very high proportion of citizens (80%) buy environmentally friendly products; about a quarter of them (26%) purchase these regularly and about half of them (54%) purchase these occasionally. Twenty percent of EU citizens do not buy environmentally friendly products. Europeans support taking a variety of actions for environmental reasons, and they are increasingly changing their behaviour for environmental reasons.

Policies that seek to promote pro-environmental behavioural change will need to engage with the social context that shapes and constrains social action as much as it addresses mechanisms of individual choice (Jackson 2005). Kollmuss and Agyeman (2002) suggest that factors important in pro-environmental (green behaviour) fall under three headings: demographics, external and internal. External factors include infrastructure, economic, social and cultural factors. Internal factors include variables in the cognitive and affective domains such as environmental knowledge, motivation, values, attitudes, environmental awareness and perception of control. Attempting to understand the relationships among these and how they impact peoples' behavioural decisions is the focus of extensive social-psychological research and is addressed in the following section (see Sect. 8.3).

8.3 Behaviour Models

Many different models of environmental behaviour can be found in the theoretical and empirical literature. They consider a broad range of aspects of the person whose behaviour is under consideration (i.e. internal, also termed personality or psychosocial factors) and the situation in which they are acting (i.e. external, also termed contextual factors or situational factors). This section presents several theories (i.e. models) of behaviour. While it does not attempt to be a conclusive review of theories relevant to environmental behaviour (which is beyond the scope of this chapter), it is organised in a manner that attempts to reflect development in the research and understanding of factors that influence our behaviour and should inform the development of educational interventions. While any attempt for categorisation of the existing models is at risk of oversimplification, three groups of models may be identified according to the factors they highlight.

8.3.1 *Knowledge-Based Models*

Early thinking regarding environmental education took a linear approach to environmental behaviour with a focus on knowledge and awareness. The assumption was that providing knowledge (information) will invariably lead to more environmental awareness and a positive attitude towards the environment, which, in turn, will lead individuals to behave in a more environmentally responsible manner. This approach, known as the K-A-B (knowledge-attitude-behaviour) model, also informed much of the campaigning and communication strategies. However, the widely reported knowledge-attitude-behaviour gap found in much environmental behaviour research indicates the insufficiency of reliance on solely information-driven behavioural change.

The debated role of knowledge in promoting pro-environmental behaviour has increased attention to the knowledge domain. For example, Kaiser and Fuhrer (2003) identify different forms of knowledge and claim that these must work together to promote ecological behaviour. According to their typology, declarative environmental knowledge refers to factual knowledge (i.e. how environmental systems work), and procedural knowledge refers to action-related knowledge (i.e. the know-how to achieving environmental protection goals such as different courses of action and how to participate). Effectiveness knowledge is related to the individual's cost-benefit ratio (i.e. the ability to rationally assess the worthwhileness of the personal trade-off, such as effort and financial) and relates to the environmental effectiveness of the alternative behaviours. In addition to these forms of knowledge, they acknowledge the role of social knowledge, i.e. social norms. Some of these knowledge types are understood by other researchers not as knowledge but rather as other components that make up the individual's environmental literacy. For example, procedural knowledge is equivalent to the skills element of environmental literacy: the higher-order cognitive skills for critically assessing alternative courses of action and the sociopolitical skills required for citizen participation (Alkahrer and Goldman 2017; Hollweg et al. 2011). The parallels of social knowledge are addressed in Sect. 8.3.2.

Knowledge-based models have been furthered by asking questions about the origins and development of knowledge, perceptions and attitudes. Experiential Processing Theory argues that experientially derived knowledge has more impact on behaviour than abstract knowledge (Epstein 1994). Leiserowitz's study into climate change perceptions and behaviour (2006, p. 45) has shown that 'American risk perceptions and policy support are strongly influenced by experiential factors, including affect, imagery, and values'. Experiential Processing Theory argues that people's behavioural choices are not only rational, based on analytic cost-benefit (and risk) or likelihood calculations, but also are driven by affect and emotions (Leiserowitz 2006). Behaviours might be driven by misconceptions or selective framing that from the individual's perspective might be perfectly rational, even though incompatible with scientific knowledge (e.g. as taught at schools). Thus, Leiserowitz (2006) argues that knowledge and attitudes that drive behaviours are significantly influenced by (1) affect, what positive and negative feelings does an

individual have towards a valued object, e.g. environment, and (2) imagery, what are the visual and mental representations related to environment, what is the mental model that accommodates those visual representations of a valued object, e.g. environment. It is important to stress the value of experiential processing instead of focusing solely on rational analytic models or abstract learning in classrooms. The impact of direct experience does not always work towards fostering pro-environmental behaviours. For example, Whitmarsh claims that her research conducted in the south of England ‘indicate flood victims differ very little from other participants in their understanding of and responses to climate change, but that experience of air pollution does significantly affect perceptions of and behavioural responses to climate change (Whitmarsh 2008, p. 351)’. Thus, Education for Environmental Citizenship should also examine the preexisting mental models and work with cases that have the highest direct influence; meaning that they raise affect, provide with images and are easily implanted into the already existing mental models of school children.

8.3.2 *Attitude-, Value- and Norm-Oriented Models*

The role of knowledge is considered to be important but not as the only crucial factor. Several models highlight the role of the affective domain, and a significant body of theoretical and empirical literature in social psychology addresses the role of values in human behaviour. Three fundamental types of value orientation are identified: egoistic values (self-interest; environmental concern stems from the impact of the environment on one’s self, self-oriented goals and people important to the individual), social/human altruism (the scope of concern is humanity) and biospheric/ecocentric altruism (the scope of moral consideration is towards other species and the state of ecosystems, i.e. nature’s well-being) (de Groot and Steg 2008; Schultz 2001). Egoistic values and human altruism reflect an anthropocentric ethic, while in a biospheric value orientation, moral consideration of nature is independent of services it provides for humans – an ecocentric orientation.

One of the most applied models of environmental behaviour in social psychology is the Theory of Planned Behaviour (TPB) by Ajzen (1991). The underlying assumption is that people behave rationally; decision-making is guided by rational evaluation of perceived positive and negative consequences. According to the TPB theory, the intention (i.e. plan) to act in a certain way is the strongest predictor of actual behaviour, and this intention is in turn determined by attitudes towards the behaviour, subjectively perceived norms that the actor perceives in their social environment and the perceived behavioural control of the actor (Fig. 8.5). Thus, attitudes do not determine behaviour directly but indirectly through behavioural intention. Behavioural intentions are shaped not only by attitudes but also by social norms. Within this theory, attitudes can be understood as positive or negative evaluations of the behaviour and its consequences based on personal outcome beliefs and outcome evaluations. Subjective norms capture the expectations of important others

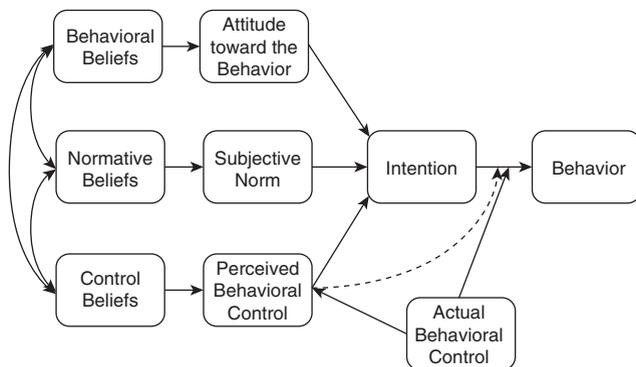


Fig. 8.5 Schematic description of main elements of the Theory of Planned Behaviour (TPB)

(i.e. what they consider preferable/non-preferable behaviour) and how much the acting person is willing to comply with these expectations. Thus, the primary determinants of behaviour are behavioural beliefs regarding consequences of the behaviour and normative beliefs regarding how other people view the behaviour (Fig. 8.5).

An additional factor, the perceived behavioural control component, acknowledges that the performance of most behaviours ‘...depends at least to some degree on such non-motivational factors as availability of requisite opportunities and resources (e.g. time, money, skills, cooperation of others [...]). Collectively, these factors represent people’s actual control over the behaviour. To the extent that a person has the required opportunities and resources, and intends to perform the behaviour, he or she should succeed in doing so’ (Ajzen 1991 p.182). Thus, the TPB acknowledges the importance of situational constraints.

Ajzen (1991) considers the influence of actual behavioural control on behaviour as self-evident, but for him, ‘Of greater psychological interest than actual control, however, is the perception of behavioural control and its impact on intentions and actions’ (p. 183). In other words, perceived behavioural control refers to an individual’s perceptions of the ease/difficulty in performing the specific behaviour. This means that in principle, the TPB is open for the inclusion of objectively existing restrictions and options in addition to perceived ones when formulating predictive models.

An early model applied to explain environmentally friendly behaviour was the Norm-Activation Model (NAM) by Schwartz (1977). The model was originally developed to explain altruistic, helpful behaviour. The basic assumption of the NAM is that moral or personal norms are direct determinants of prosocial behaviour. However, since altruistic behaviour is one that benefits others, the model could be easily transferred to positive environmental behaviours that protect and benefit the environment and therefore others. The model assumes that social norms requiring people to help others in protecting the environment are conveyed to individuals via processes of education and communication and thus become personal norms. If persons have internalised personal norms of positive environmental behaviour

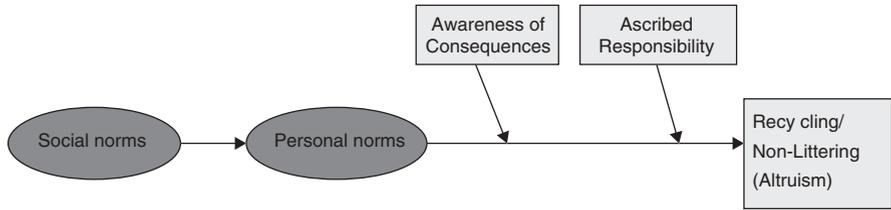


Fig. 8.6 Schematic description of main elements of the Norm-Activation Model (NAM) of altruistic behaviour by Schwartz (1977)

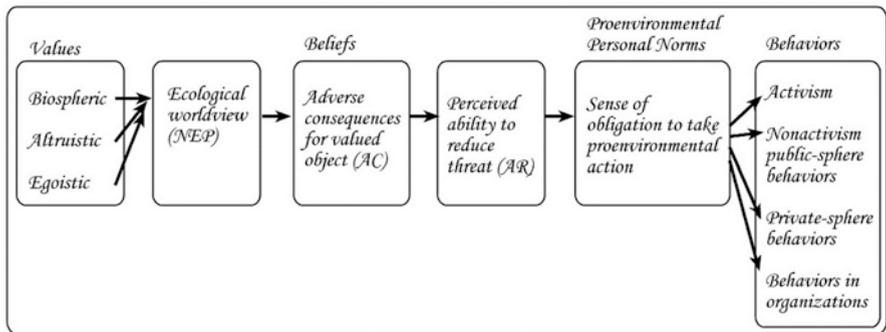


Fig. 8.7 Schematic description of main elements of the Value-Belief-Norm (VBN) model by Stern et al. (1999). (Adapted by Goldman et al. 2014 from Stern et al. 1999, with kind permission of the authors)

and are aware of the consequences of their actions and assume responsibility for their actions and resulting consequences, people will act in an environmentally friendly way, e.g. by recycling, correct waste disposal, using a bicycle, using public transport or choosing not to fly (Fig. 8.6).

Stern et al. (1999) developed the Value-Belief-Norm (VBN) theory of environmental behaviour.¹ The model can be regarded as a modification and further development of the Schwartz (Norm-Activation Model of 1977) as it views altruistic, environmental and egoistic value orientations as predictors of ecologically oriented personal norms, which are enacted if the actor is aware of the consequences of their own actions and assumes responsibility for their actions. The VBN theory (Fig. 8.7) links the New Environmental Paradigm (NEP) worldview (Dunlap and Van-Liere 1978) along with value theory and the norm-activation theory into a causal chain of

¹The VBN theory of environmental behaviour distinguishes among three types of behaviours: (a) private-sphere (pro-)environmental behaviour, (b) individual organisational (pro-)environmental behaviour and (c) public-sphere behaviours ranging from passive forms (e.g. stated approval of environmental regulations, acceptance of taxes for environmental protection) to more active forms (e.g. joining and donating to environmental organisations), to environmental activism (e.g. active involvement in environmental organisations and demonstrations).

variables leading to behaviour. In this causal chain of factors that influence behavioural decisions, basic personal values are the fundamental determinant.

A further, well-acknowledged, contemporary model is the Theory of Interpersonal Behaviour by Triandis (1977), which considers attitudes, social factors (roles, norms), self-identity, affective factors (emotions) and facilitating (vs. inhibiting) factors together with habits.

8.3.3 Skills, Self-Efficacy and Situational Factors

While the VBN model covers various social and individual moral- and value-oriented motivational aspects, cognitive factors such as knowledge and skills and situational constraints are not considered in depth by this model. Some early and more recent models attempt to incorporate these variables.

An early empirically based model (constructed from meta-analysis of existing studies on pro-environmental behaviour) is the Model of Responsible Environmental Behaviour (REB) put forth by Hines et al. (1987). This model (Fig. 8.8) incorporates various internal cognitive and affective factors (i.e. social-psychological/personality variables). The increased complexity of this model results from it combining the TPB with environmental knowledge and skills components. Additionally, since studies indicate weak empirical relationships between the cognitive and affective and between the affective and behavioural components, thus indicating the involvement

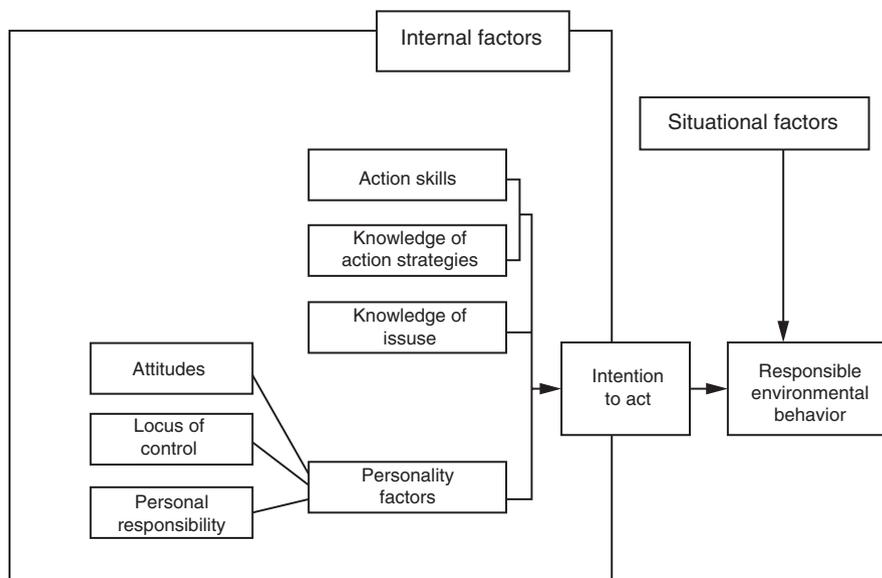


Fig. 8.8 The Model of Responsible Environmental Behaviour. (Hines et al. 1987)

of additional influential factors, this model includes the component of ‘external/situational’ factors (see Fig. 8.8). Situational, environmental and social constraints are crucial aspects when taking a systemic view of reciprocal determination of human action and social and environmental systems, for example, in the frame of socioecological systems.

When Hines et al. (1987) constructed the Model of REB based on the meta-analysis of environmental behaviour studies, only a few of these studies reported on the quantitative relationships between variables. Twenty years later, a meta-analysis of psychosocial determinants of pro-environmental behaviour was repeated with the aim of quantifying the strength of the relationships between these psychosocial variables (Bamberg and Møser 2007). The latter meta-analysis confirms that behavioural intention mediates the influence of all the other psychosocial variables on behaviour. Independent predictors of pro-environmental behavioural intention are attitudes, behavioural control and personal moral norms; the latter influenced by an interplay of cognitive (awareness of and knowledge about environmental problems), emotional (guilt) and social factors. Thus, awareness and knowledge about environmental issues is an important but indirect determinant of pro-environmental behaviour.

Taking the Hines et al. (1987) model of REB further led to a revised Model of REB (Hungerford and Volk 1990) in which there are three groups of variables that influence behaviour (Fig. 8.9):

1. Entry-level variables are considered prerequisite for responsible citizenship behaviour. The major variable of this group is sensitivity to the environment.
2. Ownership variables make environmental issues personally important. Major variables of this group are deep understanding of issues (the nature of the issue and its human and ecological consequences) and personal investment, which reflects the individuals identifying with the issue.
3. Empowerment variables are crucial in environmental education as they make the individual feel a sense of ability to influence. Major variables in this group are action, knowledge and skills for using citizenship strategies to effect change, locus of control (LOC) specifically an internal LOC (the individual’s belief that they can achieve change and make a difference) and behavioural intention.

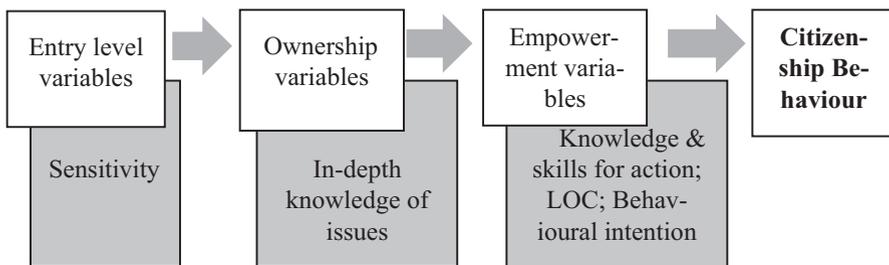


Fig. 8.9 Revised model of REB. (Adapted from Hungerford and Volk 1990)

At the time this model was developed, there was insufficient empirical evidence as to the relationships between the variables and behaviour, and their importance to environmental education was, and still is, acknowledged. According to this model, the variable categories also work in a complex but linear way (Fig. 8.9).

Cognitive factors and skills are more explicitly addressed in the Motivation-Opportunity-Abilities Model by Ölander and Thøgersen (1995) and similarly the Needs-Opportunities-Abilities Model (cf. Gatersleben and Vlek 1998), which argue that needs and opportunities together constitute the motivation to engage in a certain behaviour, while abilities and opportunities together constitute the behavioural control required for performing it.

8.3.4 New Approaches to Environmental Behaviour Models

According to Stern (2000), encompassing models of environmentally significant behaviour of individuals need to consider the following:

1. Personal attitudinal value-related variables: Personal motivational factors such as attitudes, personal norms, beliefs (outcome beliefs, evaluation of possible outcomes), values and goals that are part general and part specific to a certain behaviour. These correspond to motivational, affective learning goals in the educational frame.
2. Personal capabilities: These variables include knowledge and skills required for particular actions, which correspond to cognitive learning goals, together with behavioural control variables such as having enough time, money, power and resources.
3. Contextual factors: These include restrictions and options, facilitating and inhibiting aspects of the social and physical environment such as available technology, geographic physical aspects, material costs and rewards, policies, laws and regulations, social norms and expectations.
4. Habits: Past behaviour and its accumulated effect through the formation of habits.

These four domains of influential aspects can be and have been conceptualised and measured by a variety of environmental behaviour models in different ways. However, most behaviour models do not include all four domains, and some behaviour models include concepts that are difficult to align with these domains. For example, the TPB considers personal capabilities such as knowledge and skills only indirectly via their influence on perceived behavioural control, and it does not include past behaviour or habits as predictors of future behaviour. The predictive power of 'past behaviour' has not been overlooked by Ajzen (1991). On the contrary, he acknowledges that 'past behaviour is the best predictor of future behaviour' (p. 202), if internal and external determinants of behaviour remain stable. However, he regarded past behaviour as a tautological circular determinant of future behaviour that may be omitted in a good model and includes all actual explanative factors.

There are good reasons for this as, for example, explanations of the type ‘I go by bike to work today, because I did so yesterday’ do indeed seem tautological and empty and in terms of the conclusions to be derived from predictive models for behavioural change and environmental education. Still, the accumulation of past actions can lead to habits, and habitual behaviour may, to some extent, take place rather automatically without extensive, conscious behavioural decision-making.² This led to the development of specific behaviour modification approaches when confronting habitual behaviour, namely, raising awareness for the need to change behaviour and providing help and incentives for trying out new behaviours and refreezing new behaviours as environmentally friendly habits (Dahlstrand and Biel 1997; Lewin 1951). Furthermore, behavioural determinants for future behaviour will always be altered by the performance of a certain behaviour, as learning effects based on performance processes and outcome evaluations take place. So, there are also various arguments speaking in favour of past behaviour and/or habits as explanatory factors for future behaviour as advocated by Stern (2000). Still, the amount of variance explained by models including past behaviour may not be easily compared to the variance explained by models without reference to past behaviour, since stability of behaviour over time gives the former models a great statistical advantage in many behavioural domains, which does not always correspond to an increased understanding of the deeper determinants or causes of the behaviour.

Based on Stern’s requirements for encompassing behavioural models, Hansmann and Steimer (2015, 2017) developed an integrative Model of Justified Behaviour (MJB). Accordingly, it considers personal motivational factors such as attitudes, values and personal norms, personal knowledge and skills, social factors and processes (social norms, roles, pressures, group dynamics), facilitating or inhibiting contextual factors (restrictions and options) and the formation of habits as explanatory variables for environmental behaviours (Fig. 8.10).

In addition, processes of justification have been included as crucial aspects of behavioural decision-making. According to Sykes and Matza’s (1957) Neutralization Theory of Delinquency, justifications can enable people to deviate from personally accepted social norms by protecting them from self-blame and being blamed by others. Justifications can, therefore, deactivate existing personal norms and thus prevent them from being behaviourally effective. Justifications can also help to explain negative environmental behaviours of people who have internalised positive environmental behaviour norms and can contribute to our understanding of the reported discrepancies between attitudes and behaviours (e.g. Hansmann and Steimer 2015, 2017; Schahn and Bertsch 2003; Schahn et al. 1995; Diekmann and Preisendörfer 1992). Sykes and Matza (1957) distinguish post-behavioural justifications for norm-violating behaviours in the past, which they call rationalisations, from justifications that precede norm-violating behaviours, which they call neutrali-

²The importance of habits and automatic behaviour is stressed also by the theory of social practices. In relation to environmentally significant behaviour, social practice theory questions the idea that attitudes or values are drivers of behaviours and highlights the importance of habits and contextual factors [see, e.g. Shove 2010].

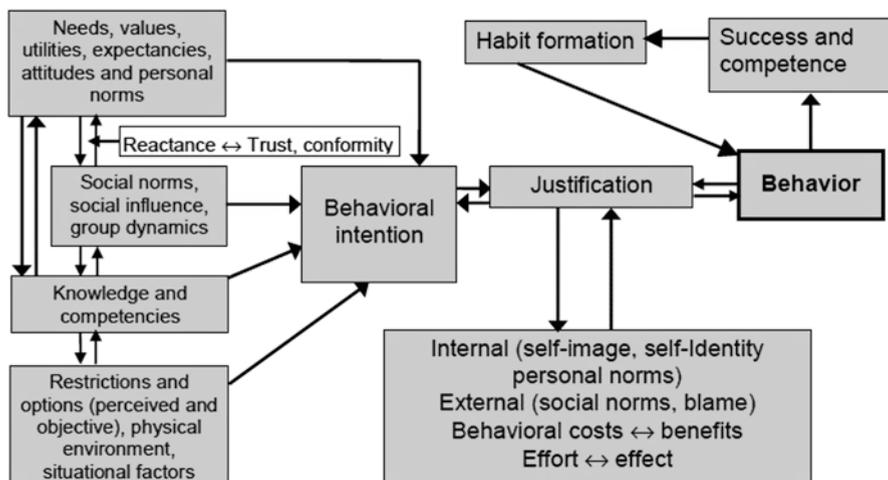


Fig. 8.10 Schematic depiction of the Model of Justified Behaviour (MJB) by Hansmann and Steimer (2015). (Adapted from Hansmann and Steimer 2015, 2017)

sations. Rationalisations for norm-violating behaviours in the past can serve as neutralisations for norm-violating behaviours in the future, and negative environmental behaviour can thus be stabilised over time leading to the formation of negative habits. According to the MJB, behaviour that has been displayed repeatedly without encountering difficulties can become a habit and may be performed both automatically and subconsciously without further processes of active, conscious justification and behavioural decision-making. Justifications need to be treated with care, including in environmental campaigns, since mentioning them directly may provide arguments for negative environmental behaviours.

The idea that past behaviour might predict future behaviour has been recently expanded, adding to the discussion the idea of behavioural clusters (Whitmarsh and O'Neill 2010) and the possible interrelations among different environmental behaviours (Thøgersen and Crompton 2009). It is not only the past behaviours of the same type but also past and present behaviours of other types of environmental behaviours that matter. A Behavioural Spillover Theory is being currently developed by Lorrain Whitmarsh and colleagues (Nash et al. 2017; Poortinga et al. 2013), who attempt to explain how one type of environmental behaviour might influence the occurrence of another. In other words, one habit could influence the development of another habit. For example, 'if people stop using single-use carrier bags and start bringing their own reusable bag to the shops, they may see themselves as more waste conscious, which then may lead to other waste-conscious decisions and behaviours' (Poortinga et al. 2013, p. 7). Whitmarsh and O'Neill (2010) explain this through the notion of environmental identity. Engagement in pro-environmental behaviour may encourage changes in environmental identity, which may then lead to further behavioural changes in line with their revised identity (Poortinga et al. 2013, p. 7). DEFRA (2008) draws attention to catalytic behaviours that might serve

as change starting points. Leveraging those ‘catalytic’ behaviours would bring about desired behavioural changes.

A newly emerging area of study, relevant to understanding the determinants of pro-environmental behaviour and with significant implications for educating for Environmental Citizenship, is the area of Positive Psychology of Sustainability. Pro-environmental behaviour is conventionally associated with negativity: negative feelings (e.g. fear, guilt) that move people to pro-environmental actions or negative feelings resulting from the efforts, perceived required sacrifices or trade-offs (e.g. discomfort, inconvenience, time, financial) associated with conducting pro-environmental actions. Positive Psychology of Sustainability focuses on positive emotions associated with pro-environmental behaviour. It assumes and asserts that involvement in pro-environmental behaviour has personal psychological benefits (e.g. a sense of achievement and satisfaction or sense of empowerment) and that these positive psychological outcomes reinforce pro-environmental behaviour and therefore lead to a reciprocal reinforcing process (Corral-Verdugo 2012). Kerret et al. (2014) propose a theoretical model that links pro-environmental behaviour with cognitive factors, such as hope, self-control and resistance to peer pressure, and variables of subjective well-being (Fig. 8.11).

According to the model, (1) environmental hope is a latent cognitive variable (indicated by agency thinking, pathway thinking and social trust) that mediates environmental behaviour as well as subjective well-being and (2) self-control is a latent cognitive variable (indicated by self-control skills and resistance to peer pressure) that moderates between hope and environmental behaviour. Since this is a newly emerging area, empirical research is needed to test the model in formal and non-formal frameworks. Initial evidence (Kerret et al. 2016) that pro-environmental behaviour and subjective well-being are both enhanced via the same environmental hope path emphasises the importance of promoting hope in environmental education.

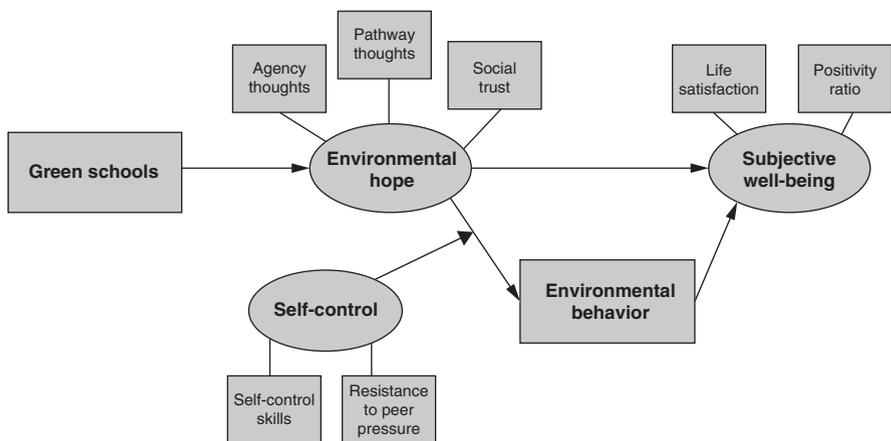


Fig. 8.11 Green schools’ hope-mediated influence on students’ environmental behaviour and subjective well-being. (Source: Kerret et al. 2014)

Their model also offers a ‘solution to one of the barriers to promoting environmental behaviour; namely the need to choose between hedonic and normative goals’ (Kerret et al. 2016, p. 8). Initial findings suggest that infusing people with environmental hope may simultaneously raise both pro-environmental behaviour (a normative goal) and subjective well-being (a hedonic goal). Focusing on developing an individual’s environmental hope is relevant not only for formal education interventions but also for non-formal, environmental communication campaigns.

This presentation of models of REB concentrated mainly on theories that address internal factors, since educational interventions are concerned with developing the individual and cultivating the individual’s attributes that may lead to active citizenship. Situational (i.e. external; contextual) factors also play a crucial role in achieving SD and a sustainable society. While adopting environmentally responsible behaviour starts with the individual, supportive institutional, political and social policies create the supportive climate that enables and encourages Environmental Citizenship at the individual level (Goldman and Kadish 2012).

8.4 Implications for Educating for Environmental Citizenship

Implementation of educational interventions to foster Environmental Citizenship might raise false expectations to see immediate behavioural change. Hysteresis Effect, which was first explained in the natural and exact sciences and then transferred to the social sciences, for example, to explain environmental activism (Bozonnet 2016), points to a possible lag between the input (e.g. the educational interventions at school) and the output (lifestyle changes including behavioural changes). Behaviours are dependent on the cultural history that an individual must deal and comply with (or alter). Thus, the impacts of educational programmes, as well as other factors presented in this chapter, should be seen as history dependent and requiring time in order to generate the outcome – the difference, or the anticipated active Environmental Citizenship. Hysteresis Effect also implies that none of the influences are linear but rather cumulative, interdependent and complex.

While none the above described models are able to explain all the aspects of human environmental behaviour, they imply important suggestions for the practice of Education for Environmental Citizenship:

- Focusing solely on promoting environmental knowledge may be considered ineffective and, in some aspects, even a controversial strategy. Considering this, Education for Environmental Citizenship programmes should be action based, i.e. provide the opportunity to experience and change something and get emotionally involved and see the effects.
- Social norms seem to be another important factor. In line with this, community-, group- and place-based programmes seem to be more effective than strategies limited to involving individual school students only within the framework of school.

- To shape students' values and attitudes, experience and emotion should be considered as inherent components of Education for Environmental Citizenship programmes. This also calls for teaching students how to handle their emotions and reflect their feelings.
- Following the Experiential Processing Theory, Education for Environmental Citizenship should implement elements of experiential learning. Education for Environmental Citizenship should develop affective relationship with one's local environment (urban and rural ecosystems and local nature), provide more detailed and accurate information on regional and global environmental processes and issues and develop imagery that is consistent with scientific knowledge and is best suited to the cultural contexts and individual mental models. Following Experiential Processing Theory, Education for Environmental Citizenship should provide positive experiences of diverse environmental issues and relevant environmental behaviours, including private (e.g. recycling, green consumption) and public-sphere behaviours (e.g. writing a letter to the local council, participating in an environmental campaign).
- Following the Behavioural Spillover Theory, Education for Environmental Citizenship should foster catalytic behaviours – those behaviours that are powerful changers of environmental identity and therefore infuse lifestyle changes including changes across various types of environmental behaviours. The greatest challenge is to identify these catalytic behaviours and embed them into the educational programmes. These might be context specific. For example, recycling may be a powerful case in many schools since it may further foster resource-saving behaviours. But caring for homeless dogs may be the most powerful case in another school, leading to fostering animal welfare activism and constraining consumption of some goods (related to harming animals and reducing their welfare).
- Following the Hysteresis Effect Thesis, (1) it points out that developing Environmental Citizenship is a long-term and continuous process. Student assessments at schools should focus on measuring efforts and personal engagement, rather than measuring results (i.e. outcomes, as understood in its many dimensions and types). This is because there is a lag between the educational input and the output (presence of Environmental Citizenship within the mental structures and lifestyles of the pupils). (2) Hysteresis Effect also points to the influences of general culture and families. Thus, Education for Environmental Citizenship should encourage community-based projects that are directed at broader attitudinal changes and behavioural shifts within society.

The apparent differences in levels of engagement with environmental behaviours among European countries suggest that Education for Environmental Citizenship should take into account the context in which it is applied. The starting positions are diverse, and educational programmes should therefore be adapted to national contexts.

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